

IN THE CLAIMS:

Claim Summary

Claims 56, 58, 59, 66, 75, 79, 80, 84, 88, 89, and 98 are amended. For the Examiner's convenience, and in accordance with 37 C.F.R. § 1.121, a complete listing of the claims is set forth below with corresponding status identifiers for each claim.

Amended Claims

Claims 1-55 (Cancelled).

56. (Currently amended) A process for the production of a component consisting of a fiber reinforced material, wherein:

a liquid heat curing resin is applied to a semi-finished fiber article via vacuum pressure, and

the vacuum pressure is controlled together with temperature such that during application of the liquid resin, including during resin infiltration and curing, the boiling point curve of the resin is not exceeded.

57. (Original) A process as defined in claim 56, wherein the application by vacuum pressure is controlled via a vacuum pump during the resin infiltration.

58. (Currently amended) A process as defined in claim 56, wherein vacuum pressure is applied to a distribution fabric serving to supply the resin to the semi-finished fiber article.

59. (Currently amended) A process as defined in claim 56, wherein the pressure following the resin infiltration is measured at a distribution fabric serving to supply the resin to the semi-finished fiber article.

60. (Original) A process as defined in claim 59, wherein at least one pressure sensor is brought into operative contact with the distribution fabric following the resin infiltration of the article.

61. (Original) A process as defined in claim 60, wherein the operative contact is interrupted prior to and during the resin infiltration of the article.

62. (Original) A process as defined in claim 56, wherein the semi-finished fiber article is placed in a mold during the resin infiltration.

63. (Original) A process as defined in claim 62, wherein the temperature of the mold is controlled.

64. (Original) A process as defined in claim 56, wherein a plurality of temperature sensors are arranged at a vacuum foil.

65. (Original) A process as defined in claim 56, wherein the temperature is adjusted with respect to a temperature dependence of the viscosity of the resin.

66. (Currently amended) A process as defined in claim 65, wherein a the resin infiltration takes place in an injection phase at a certain temperature or in a certain range of temperatures, the resin thereby having such a viscosity that an essentially uniform resin front is formable.

67. (Original) A process as defined in claim 65, wherein the temperature is adjusted such that the viscosity of the resin is in a range of about 10 mPas to 1000 mPas.

68. (Original) A process as defined in claim 56, wherein a reduction in the application by vacuum pressure is brought about in a curing phase following an injection phase.

69. (Original) A process as defined in claim 68, wherein an increase in temperature is brought about in the curing phase following the injection phase.

70. (Original) A process as defined in claim 56, wherein the temperature is increased in a curing phase, the resin being completely cured during said phase.

71. (Original) A process as defined in claim 70, wherein the temperature is increased in relation to an injection phase.

72. (Original) A process as defined in claim 70, wherein the temperature is increased in relation to a curing phase following an injection phase.

73. (Original) A process as defined in claim 56, wherein the temperature is adjusted such that a certain processing period or a certain processing period range is specified for the resin.

74. (Original) A process as defined in claim 73, wherein the temperature is adjusted such that the processing period of the resin is adapted to a workpiece size.

75. (Currently amended) A process as defined in claim 56, wherein a process monitoring is carried out with respect to the resin infiltration and the resin curing.

76. (Original) A process as defined in claim 56, wherein the resin is pre-aged prior to the infiltration to increase the viscosity.

77. (Original) A process as defined in claim 56, wherein:
a resin trap is provided for making a uniform application by vacuum pressure possible after the resin infiltration, and
any removal of the resin by suction during a curing phase of the resin is essentially prevented.

78. (Original) A process as defined in claim 77, wherein the resin trap comprises an extraction guide means having such a large internal diameter that air and gas bubbles are able to rise without resin being pressed into an extraction chamber.

79. (Currently amended) A process as defined in claim 77, wherein the extraction ~~chamber~~ guide means is formed in a resin storage vessel for the resin injection.

80. (Currently amended) A process as defined in claim 56, wherein a distribution fabric serving as a flow aid for the supply of the resin to the semi-finished fiber article becomes inoperative at a certain distance in relation to a workpiece edge.

81. (Original) A process as defined in claim 80, wherein the distance is in a range from about 10 mm to 50 mm.

82. (Original) A process as defined in claim 80, wherein the distribution fabric ends prior to said distance.

83. (Original) A process as defined in claim 80, wherein a cover film is provided between a workpiece and a distribution film for limiting the effectiveness of the distribution fabric.

84. (Currently amended) A process as defined in claim 56, wherein a distribution fabric serving as a flow aid during the supply of resin is cut in relation to a workpiece edge forming a gap in the distribution fabric in order to control an angular course of a flow front of the resin.

85. (Original) A process as defined in claim 84, wherein an end of said workpiece edge is sealed.

86. (Original) A process as defined in claim 56, wherein at least one vacuum port is provided, vacuum pressure being applied to a workpiece via said port or ports and said port or ports being connected to at least one vacuum pump.

87. (Original) A process as defined in claim 86, wherein one vacuum port is arranged in an area last reached by a flow front of injected resin.

88. (Currently amended) A process as defined in claim 86, wherein one vacuum port is designed as a resin trap able to accommodate an amount of resin necessary to prevent the resin from passing into a vacuum system.

89. (Currently amended) A process as defined in claim 87, wherein said vacuum port is positioned over a distribution fabric and connected via the distribution fabric to an underside of the semi-finished fiber article.

90. (Original) A process as defined in claim 86, wherein a connection of the vacuum port to a vacuum foil is sealed.

91. (Original) A process as defined in claim 89, wherein the distribution fabric is sealed in relation to a workpiece edge.

92. (Original) A process as defined in claim 91, wherein the distribution fabric is sealed by a seal, and a film is arranged between the distribution fabric and the seal.

93. (Original) A process as defined in claim 86, wherein the vacuum port is sealed in relation to the workpiece.

94. (Original) A process as defined in claim 56, wherein a resin

brake is arranged at a workpiece edge.

95. (Original) A process as defined in claim 94, wherein a first connection for the application by vacuum pressure is arranged in front of the resin brake in relation to the semi-finished fiber article and a second connection is arranged behind the resin brake.

96. (Original) A process as defined in claim 56, wherein a process monitoring is carried out by means of ultrasound acting on the workpiece.

97. (Original) A process as defined in claim 56, wherein a polyaddition resin is used as said heat curing resin.

98. (Currently amended) A process as defined in claim 56, wherein the flow rate of the resin from a resin store to the semi-finished fiber article is controllable.

99. (Withdrawn) Apparatus for producing a component consisting of a fiber reinforced material, wherein:

a liquid heat curing resin is applied to a semi-finished fiber article via vacuum pressure, and

the vacuum pressure is controlled together with temperature such that during application of the liquid resin, the boiling point curve of the resin is not exceeded, said apparatus comprising:

at least one vacuum port for applying vacuum pressure to a workpiece,

said vacuum port comprising a resin trap able to accommodate an amount of resin necessary to prevent resin from passing into a vacuum system coupled to the vacuum port.

100. (Withdrawn) Apparatus as defined in claim 99, wherein the vacuum port is coupled to a vacuum pump.

101. (Withdrawn) Apparatus as defined in claim 100, wherein an operative connection of the vacuum port with the vacuum pump is adapted to be interrupted in a controllable manner.

102. (Withdrawn) Apparatus as defined in claim 99, wherein the vacuum port is positionable on a distribution fabric adapted to supply resin to the semi-finished fiber article.

103. (Withdrawn) Apparatus as defined in claim 102, wherein the distribution fabric, on which the vacuum port is positioned, is arranged beneath the semi-finished fiber article in relation to a supply direction of the resin.

104. (Withdrawn) Apparatus as defined in claim 102, wherein the vacuum port has a contact flange for the positioning on the distribution fabric.

105. (Withdrawn) Apparatus as defined in claim 99, wherein the vacuum port comprises a chamber for accommodating resin.

106. (Withdrawn) Apparatus as defined in claim 99, wherein the vacuum port is positionable at or within a distance to an edge of a workpiece last reached by a flow front of injected resin.

107. (Withdrawn) Apparatus as defined in claim 99, wherein a storage vessel for the supply of resin is adapted for use as said resin trap.

108. (Withdrawn) An assembly for the production of a fiber reinforced material component by means of resin impregnation of a

semi-finished fiber article, comprising:

a mold;

a vacuum foil for producing a vacuum chamber, the semi-finished fiber article being positionable on the mold in said vacuum chamber and vacuum pressure being applicable to the vacuum chamber; and

a device for supplying liquid resin to the semi-finished fiber article;

wherein application by vacuum pressure and temperature are controllable during resin impregnation such that in relation to the liquid resin the boiling point curve is not exceeded.

109. (Withdrawn) An assembly as defined in claim 108, wherein the resin is a heat curing resin.

110. (Withdrawn) An assembly as defined in claim 108, wherein a distribution fabric is arranged between the semi-finished fiber article and the vacuum foil as a flow aid for the resin.